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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
MOORTHY, ARAVIND K	

ART UNIT	PAPER NUMBER
2131	10

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/706,117	Applicant(s) KRAMER ET AL.	
	Examiner Aravind K Moorthy	Art Unit 2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 May 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-96* is/are pending in the application.

4a) Of the above claim(s) *2,3,14,16,19,21 and 34* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4-13, 15, 17, 20, 22-33, 35-40, 42-58, 60-65, 67-76, 78-80, 82, 84, 85, 87, 88, 90, 92, 93, 95 and 96* is/are rejected.

7)☒ Claim(s) *18,41,59,66,77,81,83,86,89,91 and 94* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 November 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 7.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-96 are pending in the application.

2. Claims 1, 4-13, 15, 17, 20, 22-33, 35-40, 42-58, 60-65, 67-76, 78-80, 82, 84, 85, 87, 88, 90, 92, 93, 95 and 96 have been rejected.

3. Claims 18, 41, 59, 66, 77, 81, 83, 86, 89, 91 and 94 have been objected to.

4. Claims 2, 3, 14, 16, 19, 21 and 34 have been cancelled.

Response to Arguments

5. Applicant's arguments with respect to claims 1-96 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 4-7, 11, 13, 17, 20, 71-75, 82 and 88 are rejected under 35 U.S.C. 102(b) as being anticipated by Krajewski, Jr. et al U.S. Patent No. 5,590,199 (hereinafter Krajewski).

As to claim 1, Krajewski discloses a method for establishing a secure communication channel between a client and an application server comprising the steps of:

(a) receiving, at a web server, a request from a client to have an application program executed on an application server and to have output from

the application program executing on the application server transmitted to the client;

(b) generating by a ticket service, a ticket having an identifier and a session key:

(c) obtaining, by the web server, the ticket from the ticket service;

(d) transmitting, by the web server, the ticket to the client over a secure communication channel;

(e) transmitting, by the client , the identifier from the ticket to the application server;

(f) obtaining., by the application server., a copy of the session key from the ticket service using the identifier;

(g) establishing an application communication channel between the client and the application server;

(h) executing, by the application server, the application program identified in the request;

(i) transmitting, by the application server, output of the application program over the application communication channel via a remote display protocol; and

(j) encrypting the output communicated to the client over the application communication channel using the session key [column 8, lines 1-49].

As to claims 4 and 72, Krajewski discloses that the ticket service resides on the web server [column 5, lines 14-24].

As to claims 5 and 73, Krajewski discloses transmitting, by the application server, the identifier to the web server over a server communication channel [column 5 line 64 to column 6 line 36].

As to claim 6, Krajewski discloses receiving, by the application server, a response to transmitting the identifier to the web server, the response including the session key [column 6, lines 11-36].

As to claim 7, Krajewski discloses validating, by the web server, the identifier [column 6, lines 11-36].

As to claim 11, Krajewski discloses establishing the server communication channel as a secure communication channel [column 5, lines 47-54].

As to claim 13, Krajewski discloses a method for establishing a secure communication channel between a client and an application server comprising the steps of:

(a) receiving a request from a web server to execute an application program on behalf of a client and transmit to the client output from the application program executing on the application server;

(b) receiving an identifier from the client;

(c) obtaining from the web server a copy of a session key associated with the identifier

(d) establishing an application communication channel with the client;

(e) executing the application program identified in the request;

(f) transmitting output of the executing application program over the application communication channel via a remote display protocol; and

(g) encrypting the output using the session key [column 8, lines 1-49].

As to claims 17 and 71, Krajewski discloses that the ticket is generated by a ticket service, as discussed above.

As to claim 20, Krajewski discloses that step (b) further comprises receiving a password from the client [column 5 line 64 to column 6 line 9].

As to claim 82, Krajewski discloses that step (j) further comprises decrypting communications from the application server using the session key [column 6, lines 32-36].

As to claim 74, Krajewski discloses that the application server receives a response to transmitting the identifier to the web server, the response including the session key [column 6, lines 36-67].

As to claim 75, Krajewski discloses that the web server validates the identifier [column 6, lines 36-67].

As to claim 88, Krajewski discloses that step (g) further comprises decrypting communications from the client [column 6, lines 36-67].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 8 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski, Jr. et al U.S. Patent No. 5,590,199 as applied to claims 1 and 13 above, and further in view of Johnson et al U.S. Patent No. 5,560,008.

As to claims 8 and 76, Krajewski does not teach confirming by the web server that the identifier is received by the web server within a certain time frame relative to a time that the identifier is transmitted by the web server to the client.

Johnson et al teaches confirming by a server that an identifier is received by the web server within a certain time frame relative to a time that the identifier is transmitted by a web server to a client [column 10 line 62 to column 11 line 29].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Krajewski so that the web server confirmed that the that the identifier was received by the web server within a certain time frame relative to a time that the identifier was transmitted by the web server to the client.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Krajewski by the teaching of Johnson et al because the server is not required to store the user information longer than needed or desired by the server. This provides for the cases in which the authentication for a user is good for a specified length of time, such as a certain number of minutes or hours or days. After this predetermined period of time, the server discards the credentials structure, and will no longer honor a request containing that credentials identifier. This forces the user machine to perform a new request for service, thereby inherently enforcing a periodic authentication of remote users in order to ensure that there has not been a masquerading of users [column 6, lines 38-49].

8. Claims 9, 10, 78 and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski, Jr. et al U.S. Patent No. 5,590,199 as applied to claims 1 and 13 above, and further in view of Davis U.S. Patent No. 5,818,939.

As to claims 9 and 10, Krajewski does not teach that the session key is substantially equivalent to a null value. Krajewski does not teach that the null value is a constant value.

Davis teaches session keys that are equivalent to a null value. Davis teaches that the null value is a constant value [column 4 line 57 to column 5 line 12].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Krajewski so that the session keys had a null value and the null value was constant.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Krajewski by the teaching of Davis because the examiner asserts by assigning this value to the session key this enables the client and server to know if the session key is still valid for communication.

9. Claims 12, 22-27, 29-33, 35-40, 46-50, 52-57, 64, 65, 68, 85, 87, 93 and 96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski, Jr. et al U.S. Patent No. 5,590,199 in view of Anderson et al U.S. Patent No. 6,108,787.

As to claims 12, 22, 37, 46 and 87, Krajewski discloses a method for establishing a secure communication channel between a client and an application server comprising the steps of: (a) transmitting, to a web server a request to have an application server execute an application program and transmit output from the application program executing on the application server; (b) establishing a secure web communication channel between a web browser executing on the client and the web server; (c) receiving a ticket having an identifier and a session key from the web server over the secure web communication channel; (d) establishing an application communication channel with the

application server over the application communication channel; (e) transmitting the identifier from the ticket to the application server over an application communication channel to provide the application server with information for obtaining a copy of the session key;

(f) receiving output of the application program, identified in the request, from the application server over the application communication channel; and (g) decrypting the output using the session key, all as discussed above.

Krajewski does not teach that the remote display protocol is the Remote Display Protocol.

Anderson et al teaches a remote display protocol that is the Remote Display Protocol [column 14, lines 5-11].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Krajewski so that the remote display protocol would have been the Remote Display Protocol.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Krajewski by the teaching of Anderson et al because it allows a user in a more classified network to run an application on an information processing means (e.g. workstation in the less classified network while displaying the results of the session on the information processing means (e.g. workstation) in the more classified network [column 14, lines 5-11].

As to claims 23, 47 and 65, Krajewski teaches that the ticket service resides on the web server, as discussed above.

As to claims 35, 40, 57 and 68, Krajewski teaches that the step (e) further comprises transmitting a password to the application server [column 5 line 64 to column 6 line 9].

As to claim 24, Krajewski teaches the application server transmitting the identifier to the web server over a server communication channel, as discussed above.

As to claims 25 and 48, Krajewski teaches the application server requesting a copy of the session key in response to receiving the identifier from the client [column 6, lines 37-67].

As to claims 26 and 49, Krajewski teaches the web server validating the identifier [column 6, lines 37-67].

As to claims 27 and 50, Krajewski teaches that the web server validates the identifier has not been previously received from the application server [column 6, lines 37-67].

As to claim 29, Krajewski teaches the web server transmitting the session key to the application server over the server communication channel [column 6, lines 37-67].

As to claims 30 and 53, Krajewski teaches that the server communication channel is a secure communication channel, as discussed above.

As to claims 31, 38 and 54, Krajewski teaches the web server transmitting additional information to the application server over the server communication channel [column 6, lines 37-67].

As to claims 32 and 55, Krajewski teaches that the additional information comprises login information of a user of the client [column 6, lines 37-67].

As to claims 33 and 56, Krajewski teaches that the additional information comprises a name of a software application executing on the application server [column 5, lines 14-24].

As to claim 36, Krajewski teaches that the ticket service transmitting information corresponding to at least one of the client and a user operating the client to the application server [column 6, lines 37-67].

As to claim 39, Krajewski teaches that the additional information further comprises an address of the application server [column 5, lines 14-24].

As to claim 52, Krajewski teaches that the web server transmits the session key to the application server over a server communication channel in response to receiving the identifier from the application server, as discussed above.

As to claim 58, Krajewski teaches that the ticket service transmits information corresponding to at least one of the client and a user operating the client to the application server [column 6, lines 36-67].

As to claim 64, Krajewski teaches that the ticket is generated by a ticket service, as discussed above.

As to claim 85, Krajewski teaches that the step (g) further comprises encrypting communications to the application server, as discussed above.

As to claim 93, Krajewski teaches that the client encrypts communications to the application server using the session key, as discussed above.

As to claim 96, Krajewski teaches that the application server decrypts communications from the client using the session key, as discussed above.

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski, Jr. et al U.S. Patent No. 5,590,199 as applied to claim 13 above, and further in view of Gifford U.S. Patent No. 6,049,785.

As claim 15, Krajewski does not teach that step (b) comprises receiving a nonce from the client.

Gifford teaches an identifier that is a nonce.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Krajewski so that a nonce was received from the client in step (b).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Krajewski by the teaching of Gifford because the examiner asserts that a nonce is used to prevent replay attacks.

11. Claims 28 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski, Jr. et al U.S. Patent No. 5,590,199 and Anderson et al U.S. Patent No. 6,108,787as applied to claims 22 and 46 above, and further in view of Johnson et al U.S. Patent No. 5,560,008.

As to claims 28 and 51, the Krajewski-Anderson combination does not teach that the web server validates the identifier when the identifier is received by the web server within a predetermined time frame.

Johnson et al teaches confirming by a server that an identifier is received by the web server within a certain time frame relative to a time that the identifier is transmitted by a web server to a client [column 10 line 62 to column 11 line 29].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Krajewski-Anderson combination so that the web server would have validated the identifier when the identifier was received by the web server within a certain time frame.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Krajewski-Anderson combination by the teaching of Johnson et al because the server is not required to store the user information longer than needed or desired by the server. This provides for the cases in which the authentication for a user is good for a specified length of time, such as a certain number of minutes or hours or days. After this predetermined period of time, the server discards the credentials structure, and will no longer honor a request containing that credentials identifier. This forces the user machine to perform a new request for service, thereby inherently enforcing a periodic authentication of remote users in order to ensure that there has not been a masquerading of users [column 6, lines 38-49].

12. Claims 42, 63 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski, Jr. et al U.S. Patent No. 5,590,199 and Anderson et al U.S. Patent No. 6,108,787 as applied to claims 12, 37 and 46 above, and further in view of Baskey et al U.S. Patent No. 6,049,785.

As to claims 42, 63 and 67, the Krajewski-Anderson combination does not teach that step (b) further comprises using secure socket layer technology to establish the secure web communication channel.

Baskey et al teaches using SSL and its benefits [column 5, lines 17-37].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Krajewski-Anderson combination so that step (b) would have further comprised using secure socket layer technology to establish the secure web communication channel.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Krajewski-Anderson combination by the teaching of Baskey et al because SSL is application protocol independent. A higher-level protocol can layer on top of the SSL Protocol transparently. Thus, the SSL protocol provides connection security where encryption is used after an initial handshake to define a secret key, and where the communication partner's identity can be authenticated using asymmetric, or public key, cryptography such as RSA [column 1, lines 30-41].

13. Claims 43 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski, Jr. et al U.S. Patent No. 5,590,199 and Anderson et al U.S. Patent No. 6,108,787 as applied to claims 37 and 46 above, and further in view of Gifford U.S. Patent No. 6,049,785.

As claims 43 and 60, the Krajewski-Anderson combination does not teach that the identifier is a nonce.

Gifford teaches an identifier that is a nonce.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Krajewski-Anderson combination so that the identifier was a nonce.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Krajewski-Anderson combination by the

teaching of Gifford because the examiner asserts that a nonce is used to prevent replay attacks.

14. Claims 44, 45, 61, 62, 69 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski, Jr. et al U.S. Patent No. 5,590,199 and Anderson et al U.S. Patent No. 6,108,787 as applied to claims 12, 37 and 46 above, and further in view of Davis U.S. Patent No. 5,818,939.

As to claims 44, 45, 61, 62, 69 and 70, the Krajewski-Anderson combination does not teach that the session key is substantially equivalent to a null value. Krajewski does not teach that the null value is a constant value.

Davis teaches session keys that are equivalent to a null value. Davis teaches that the null value is a constant value [column 4 line 57 to column 5 line 12].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Krajewski-Anderson combination so that the session keys had a null value and the null value was constant.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Krajewski-Anderson combination by the teaching of Davis because the examiner asserts by assigning this value to the session key this enables the client and server to know if the session key is still valid for communication.

15. Claim 80 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski, Jr. et al U.S. Patent No. 5,590,199 as applied to claim 1 above, and further in view of Gifford U.S. Patent No. 6,049,785.

As claim 80, Krajewski does not teach that the identifier is a nonce.

Gifford teaches an identifier that is a nonce.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Krajewski so that the identifier was a nonce.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Krajewski by the teaching of Gifford because the examiner asserts that a nonce is used to prevent replay attacks.

16. Claims 84 and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski, Jr. et al U.S. Patent No. 5,590,199 as applied to claims 1 and 13 above, and further in view of Anderson et al U.S. Patent No. 6,108,787.

As to claims 84 and 90, Krajewski does not teach that the remote display protocol is the Remote Display Protocol.

Anderson et al teaches a remote display protocol that is the Remote Display Protocol [column 14, lines 5-11].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Krajewski so that the remote display protocol would have been the Remote Display Protocol.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Krajewski by the teaching of Anderson et al because it allows a user in a more classified network to run an application on an information processing means (e.g. workstation in the less classified network while displaying the results of the session on the information processing means (e.g. workstation) in the more classified network [column 14, lines 5-11].

17. Claims 92 and 95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krajewski, Jr. et al U.S. Patent No. 5,590,199 and Anderson et al U.S. Patent No. 6,108,787 as applied to claims 37 and 46 above, and further in view of Anderson et al U.S. Patent No. 6,108,787.

As to claims 92 and 95, the Krajewski-Anderson combination does not teach that the remote display protocol is the Remote Display Protocol.

Anderson et al teaches a remote display protocol that is the Remote Display Protocol [column 14, lines 5-11].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Krajewski-Anderson combination so that the remote display protocol would have been the Remote Display Protocol.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Krajewski-Anderson combination by the teaching of Anderson et al because it allows a user in a more classified network to run an application on an information processing means (e.g. workstation in the less classified network while displaying the results of the session on the information processing means (e.g. workstation) in the more classified network [column 14, lines 5-11].

Allowable Subject Matter

18. Claims 18, 41, 59, 66, 77, 81, 83, 86, 89, 91 and 94 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claims 18, 41, 59, 66, 77 and 81, prior art does not discloses or fairly suggest that the identifier is an application server certificate.

As to claims 83, 86, 89, 91 and 94, prior art does not discloses or fairly suggest that the remote display protocol is the Independent Computing Architecture protocol.

Conclusion

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aravind K Moorthy whose telephone number is 703-305-1373. The examiner can normally be reached on Monday-Friday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R Sheikh can be reached on 703-305-9648. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aravind K Moorthy
July 22, 2004

AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100